VOLCANO

objective: 3240-0501

Some volcanic eruptions are quiet. The lava oozes down the side of the volcano, like Mt. Kilauea in Hawaii or the Parcutin volcano pictured here. (photos courtesy of the USGS)

Others are explosive like Mt. St Helens.

HOW THE VOLCANO ERUPTS
What determines how a volcano will erupt? There are two factors: the amount of water vapor and other gases in the magma and the compostion of the magma. Volcano world has great video of actual volcano eruptions.

COMPOSITION When you learn about rock formation, you will learn that magma can be basaltic or granitic in composition. Granitic lava contains high amounts of silica and is extremely thick. Because it is thick, it gets trapped in the vents and builds up pressure. This pressure is released in violent explosions. Basaltic lava produces quiet, oozy eruptions that slide down the side of the volcano. Balsaltic lava contains less silica and isn't as thick so it flows more easily.

GASESThe major gases which are associated with magma are carbon dioxide and water vapor. They can make-up a much as 14% of the magma. These gases increase the violence of the eruption.

TYPES OF VOLCANOES The different types of eruptions determine the shape the volcano will take. Volcanoes can be divided into three basic shapes: cinder cone, shield, and composite.

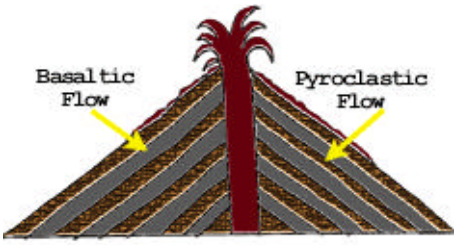
CINDER CONE

Cinder cone volcanoes form from highly explosive eruptions. These eruptions throw volcanic material called tephra high into the air . Tephra can be small, like ash, or very large, like rocks called volcanic bombs. When the loosely arranged tephra falls to the earth, it forms steep sides with a narrow base.

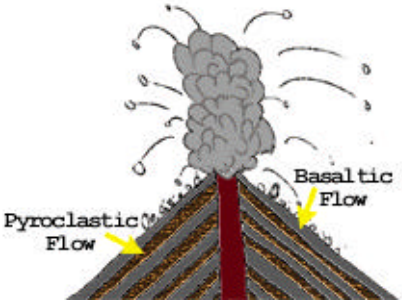
SHIELD

In a quiet eruption, the lava slowly flows out and forms flat layers that eventually make a shield volcano. The lava spreads out over a large area creating a flat base with gently sloping sides. Mauna Loa in the Hawaiin Islands is the largest shield volcano.

COMPOSITE



In composite volcanoes, the eruptions alternate between quiet and explosive. The explosive eruptions put down layers of tephra and pyroclastic flows which down the slope at high speeds. The lava if quiet eruptions runs over the tephra and pyroclastic flows forming alternating layers that eventually become a large cone-shaped mountain. Mt. Vesuvius and Mt. Etna, both in Italy, are famous composite volcanoes.



Volcano world has volcanologist interviews where you can learn how they became interested in studying volcanoes as well as their experiences with volcanoes.

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